

“Food as Medicine” readings from the World Bank WDR various issues

WDR 1993Box 4.2:

The Tamil Nadu Integrated Nutrition Project: making supplementary feeding work

In the late 1970s the government of the state of Tamil Nadu in south India was operating twenty-five different supplementary feeding programs. Evaluation showed these programs to be ineffective and identified several reasons. The programs were not directed toward malnourished children; they provided food that was often not suitable for small children and was eaten by other family members; they replaced rather than supplemented home consumption of food; they did not educate mothers; and they failed to provide needed nutrition-related health care. The Tamil Nadu Integrated Nutrition Project, the first phase of which ran from 1980 to 1989, was accordingly designed to target services more effectively, to improve family nutrition and health practices, and to improve maternal and child health services.

Children ages 6-36 months were weighed each month. Of every 100 children selected for feeding, 44 were normal in weight but faltering in growth, 34 were moderately malnourished and faltering, and 22 were severely malnourished. Supplementary feeding was provided immediately to those who were severely malnourished, and feeding for children with faltering growth was provided after one month (for children ages 6-12 months) or three months (for children ages 12-35 months). The children selected were fed for at least ninety days. If they failed to gain at least 500 grams in weight, they were referred to health care, and feeding was continued for up to 180 days. Intensive nutrition education was directed at mothers of at-risk children. Food supplementation was also offered to women whose children were being fed, to those who had numerous children, and to those who were nursing while pregnant.

The project cut severe malnutrition in half and prevented many at-risk children from becoming malnourished. Of those receiving food supplementation, 67 percent gained enough weight to graduate in ninety days; all except the severely malnourished graduated within 150 days. Because participants were fed only when required, food was only 13 percent of the project's total cost, much less than is typical in supplementation programs. (The initial share dropped during the course of the project as the number of children who needed feeding declined.) When the program began, in 1980, 45 to 50 percent of the children required feeding; by 1988 the project had brought the share down to 24 percent. Selective, limited-duration supplementary feeding worked in Tamil Nadu because the community nutrition workers were well trained and highly motivated and because mothers came to understand the importance of feeding for healthy growth and were pleased when their children grew well. The experience of Tamil Nadu suggests that appropriate supplementary feeding is both an inexpensive and an effective form of nutrition education.

Box 5.5 Targeting economic assistance in Tamil Nadu, India (WDR 1986)

A successful project for helping nutritionally vulnerable children and mothers is now under way in Tamil Nadu in South India. A survey carried out by the state government in the early 1970s showed that half of rural families consumed less than 80 percent of their daily caloric needs. Approximately 50 percent of children between one and four years of age were classified as malnourished; 45-50 percent of child deaths were a direct consequence of malnutrition. The cost of treating nutrition-related diseases was around \$5.5 million a year, or nearly one-third of the annual state expenditure for medical services. The government set out to improve this situation, especially for children under three years old. By 1980, twenty-five nutrition and feeding programs were operating at a total cost of \$8.8 million. But their impact was less than it could have been, because they were not sufficiently targeted and were not monitored properly.

In 1980 the government initiated a five-year project to combat and prevent malnutrition and to promote health. It provides nutrition and health care for children six to thirty-six months of age and for pregnant and lactating women. A special team of local community nutrition workers was trained to take the program into

their villages, and they are supported in their work by women's working groups, averaging twenty-five women in each village. Children are weighed every month to determine how fast they are gaining weight. Those who are gaining weight too slowly are enrolled in a special ninety-day program in which they are fed daily in community centers. Their mothers are counseled on how to recognize early signs of malnutrition and what to do about it. Severely malnourished children receive double rations. Complementary health services are also provided. Prenatal health care is routinely available to pregnant women; mothers in special need get extra food to take home. Nutrition and health education are a crucial part of the project. This approach, by employing a sensitive but practical growth surveillance system to identify children who are nutritionally at risk, allows supplementary feeding to be highly selective and short-term - two features that enhance cost effectiveness and avoid long-term dependence on food assistance.

The project is now working in 9,000 villages of Tamil Nadu, benefiting around one million children and more than 300,000 pregnant and lactating women. Participation rates in the project are unusually high; 80-95 percent of eligible children have taken part. About a quarter of them needed extra food at any one time, and 95 percent of those eligible took the supplements. Of those who received supplements, 65 percent showed adequate growth velocity within 90 days and a further 15 percent within 120 days; only 20 percent required extended supplementation.

The impact of the project has been monitored by comparing two blocks of villages, each with a population of 100,000. One block, the pilot block, benefited from the project; the other, the control block, was outside the project. After three years, this comparison revealed the following impact on nutritional status and on illness and mortality:

- * Severe malnutrition decreased by 32 percent in the pilot block, but by only 12 percent in the control block.

- * Moderate malnutrition decreased by 9 percent in the pilot block, but increased by 19 percent in the control block.

- * The category of "normal status or mild malnutrition" increased by 20 percent in the pilot block and decreased by 5 percent in the control block.

- * The average weight of children increased in the pilot block and decreased in the other. Nutritional advantages derived from the project were shown to persist through five years of age. At that age, children who had been in the project were heavier by 1.75 kilograms than children in other areas. The disease and mortality rates of children in the project also appeared to be falling.

Preliminary estimates suggest that the nutrition and communications components cost approximately Rs72 (\$6.50) per child per year, or Rs0.20 (\$0.02) per child per day. Expanded statewide, the total cost would be less than 1 percent of the state revenue budget. This compares favorably with the estimated costs of similar programs elsewhere in India. By targeting feeding to those at risk - when they need it - the food cost is significantly below that of most feeding programs aimed at children of preschool age. The project appears to offer a model for a cost-effective way of protecting the nutrition and health of the most vulnerable part of the population.